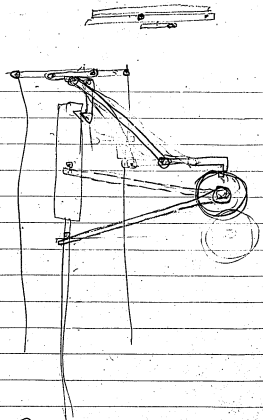
Unbound Notes and Drawings (1909)

This folder contains dated notes and drawings from 1909, as well as undated material possibly from the same year. Included are items by Edison, John F. Ott, and other employees pertaining to molded phonograph records and the possible use of storage batteries by local railroads.

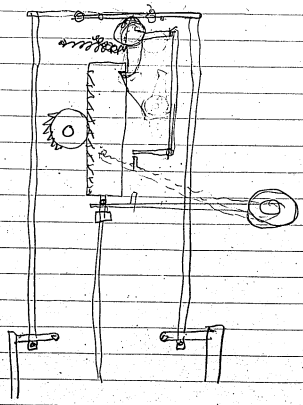
All of the documents have been selected except an oversize map of Erie Railroad routes around Orange, New Jersey.



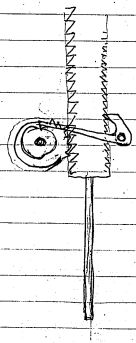
Round Bucket Loading Machine

Jan 13/09

J F Ott



Jan /09



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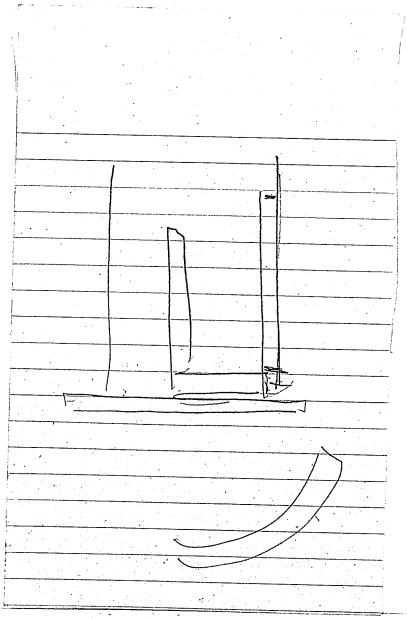
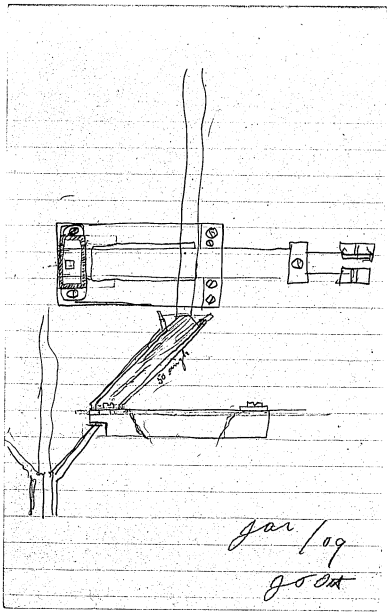
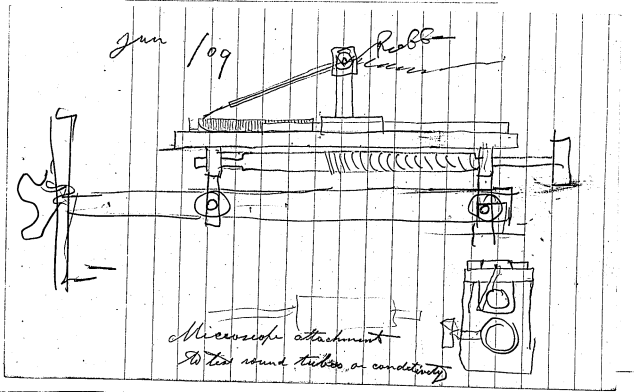
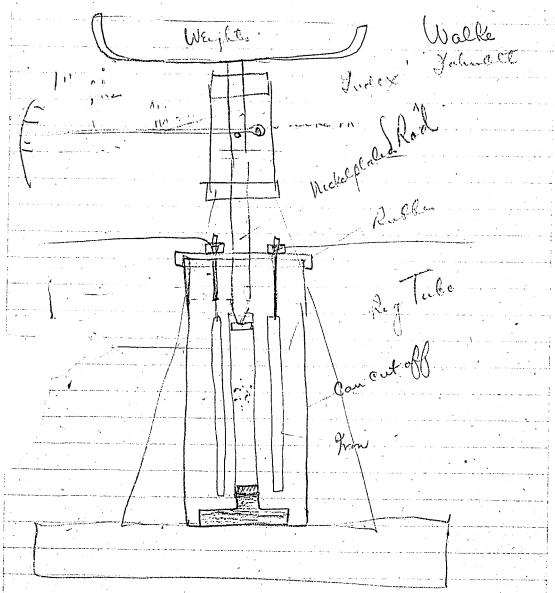
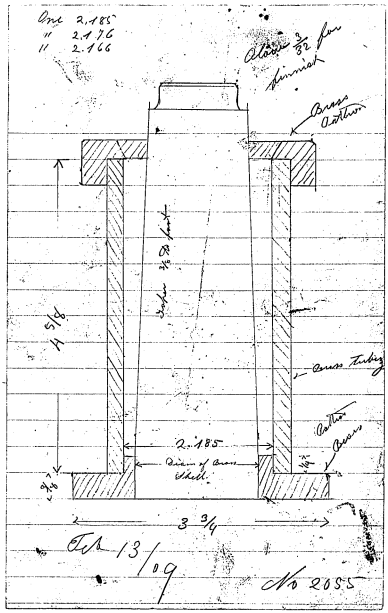


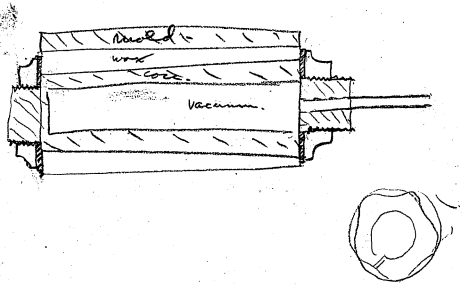

Jan 1/09
Jan 1/09


Jun 1/09
Rubber
Microscope attachment
to test round tubes, or conductivity



Bell to test expansion of Gun
Tested by charging Jan 1/09





The aluminum Cylinder 2 1/32 diam 6 in long

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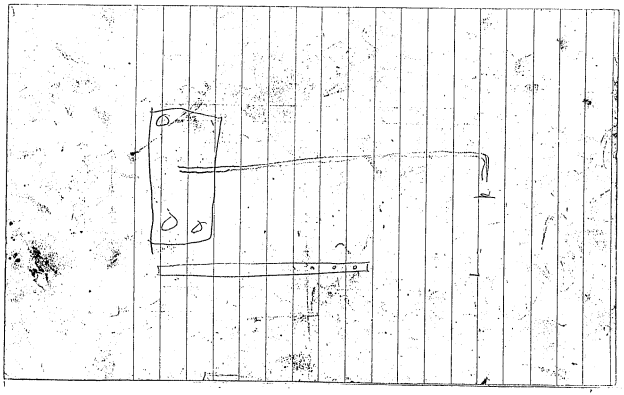
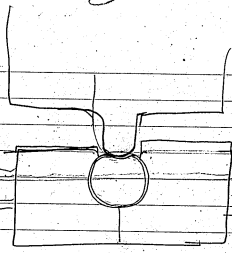


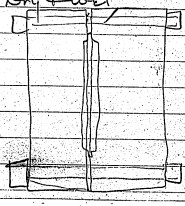
Mean 2.256.
2.237
2.223
.14
Mean 2.185
" 2.186
" 2.186
This shell is thicker 14 in 4 1/4 in
2.162
2.176
Wed 8 Oct 1890
14.5/8

John Ott - Fred Ott



Fred Ott would make the to Corrugate tubes —

Try Dry & wet



Erie

Orange Branch

10 Trains 10 stops Galway

Terminals — average time stops

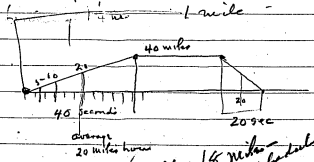
30 seconds of acceleration is 1 mile

per hour per second and 40 miles

hour maximum —

10 stops in 6 miles 30 sec still

1 mile —



braking speed only 18 miles

Time calculated

$\frac{52400}{3930}$

$\frac{13}{}$

average speed 20 miles

which compares with

1 Hour 120 miles $\frac{52400}{1048}$ $\frac{80}{2400}$ / 2620

$\frac{2620 \text{ ft.}}{1310}$

3930 ft 1 min

140
33

2

110 Tons full train 4 Cars + SBC Car —
40 with tow mile — Trip NY + back to Maplewood 32 miles
140 KWH, taken out Battery. 450 KWH in —
goes on charge with ~~so~~ 310 KWH in —
1 Hour to put on 140 KWH — Charge rate
for A8 80 amp — 60 being Normal —
240 KWH actual Taken to get the 140
Hence round trip requires 240 KWH — at bus bar
or 7.5 KWH per train mile — or 1.875 KWH
per passenger car mile — including SBC at bus —
1c KWH gives costs for trip train mile + car mile —

3

	Leave Map	arr NY	Leave NY	arrive Map
No 1	6 am	640	7	740
	620	7	720	800
	640	720	740	820
	700	740	800	840
	720	800	820	900
	740	820	840	920
	800	840	900	940
	820	900	920	10.00
	840	920	940	1020
	900			

5 trains — } of SBC
3 changing

20 minutes apart both ways —

6 am till 8 pm = 14 hours - 44 trains each way —

probably 8 trains be best for Rush —
8 Cars each 4 of which passenger —
40 Cars 80 motors —

140 / 35 | 3000 (857
2800
200
175
25

225
70
155

450
315
135

(4)

140 KWH round trip 450 in —
9 — 310 left in —

If — 225 KWH, 30 min each end
70 in —
155

Discharge rate too high —
to do this double discharge rate must be
attained, If Cored 1/2 wt battery
or double discharge rate cored save
1/2 battery weight or diminish
24 cost 246 for each trip MY to Maplewood
— up —

Commutation 1.12 mile —

27456 — 50 — 6 yrs —
164736 | 3164716 / 329472 / 240
7031289

94458 | 64800 (1.12
7
91440
44
16

20

12 — 88 — 246 — 1040 — 15 — 246 (16
2 — 2 — 84 — 312 — 900 — 2 — 600 — 2 — 1100 — 9
1 — 312 — 624 — 3744 — 7488 — 96 — 94 — 1944 — 1944 — 11 — 61 — 3 — 8 yrs.

(5)

1.12 mile — 22 miles average 24.64 Cents per passenger

11
112
1232

If average 30 to car - 4 Cars, 120 to train

at 12.32 Cents Each $14.78 — Each trip one way

120
2464
1232
14.784

88 single trips 1478

88
1824
1824
1300.64

$1300. in receipts of all

Commutators —

$1300. receipts daily —

say 6 - Trains — 10 hours work day (6)

1 Motor Man 2.75

1 Conductor — 2.75

1 Brakeman — 2.25

120 KWH Each Single Trip 1¢ KWH. 1.20 -

Oil waste - 0.50

Brakeshoes 10

8.35

10 Single Trips — Current 12.00 —

Wages & supplies — 8.35

Bailey Depr. 6 yrs — 25.60

$45.95

4.59 - per single Trip

Rept. $14.98 = per trip Train average 1/2 full

all at Commuters rate 1.12 ¢ mile

1478

459

$1019 = out of this Comes all car repairs

track repairs, Station Expenses

& General Expenses — Motor repairs

+ every other old thing

7

1500
7500

Loco Coal 17.00 =
10 Men Engr 6.00 -
" Fir 3.00 -
" Fillm. 1.00 -
Loco Repairs 5.00
27.00 =

$500. depr. each year
1000. Repairs "

20) 10000 (5

Say 27 per day — for Loco — 150 miles run

Conds. 2.75
Brakes 2.25
Yd Engine 60
5.60
27.00

10 Single trips

Oil lands } 60
Brakes Stoom }
33.20 —

Steam 33.20
Electric 45.95
23.40
22.55 possible

If Spal Gallery needs to double
decay & chg rate —
it would reduce Electric 12.50 daily
If make own Current, 500 — "
or If Gallery lasted 8 yrs — Reduce 560
23.40

possible

10.60 is easy & probable —

45.95
1060
35.35 — Electric

8

D ~~[illegible]~~ Track Trolley 11000 mile
Maplewood 16
11000
16
17600 investment.
Starting Very bad –

Erie 124 trains all roads, going to NY in 24 hours

Electric Investment over 100000 trolley

87000 Cars – 296 000 for Trolley Cars –
296000 176 000 " Trolleys, on line
but considerably more in yards – probably
Trolley on NY to Wapping Cost double
that, if it bundled things would be
paralyzed – Trolley Car system reliable –

If Battery Car Cone away with &
battery put in 4 Cars 9000 lbs Each Car
this would reduce weight of train, probably
20 tons + would some investment in battery
but if Cars would have to be out of use
when chg. — Trip to Mf 1 hour back to Maplewood
1 hour — on chg 1 hour. as cars are not
very costly probably increased investment
would not be over - 35000, as Cars would
not be used when chg'd there would
be no depew hence depew would only be
2/3 of what it would be if running
all the time — passengers would be
in train ~~time~~ train could start on sharp
time, Battery Cars not require same
Care as if on a Car by itself - but
train of 6 to 10 Cars or more could
be worked, if grades are low —
1/2 motor & half Reg Cars could be
used, & this in summer would be
OK on any Train — Certain Cars
Could be shunted off on an Emc trolly siding
to get new bat without the trolley —

/

Low Grade Line –

Cost. Power station 75000 HP Capacity	3.054 500
Transmission line, including towers, Copper + additional right of way 140 miles	989 725 –
14 Sub Stations	1 410 000
Third road construction + Trackbonding. 425 miles –	3 400 000
Engineering, Inspection, supervision	125 000
Contingent – 10%	897 923
Total.	9 877 148.
	3 [illegible]
	7 [illegible] 148

72% of bus bar power is delivered to locos. to drawbars.

260 588 000 HP Hours per year are required –

Line 132 miles Enola + W Morrisville –

Daily East bound cars av 2892 max 4338
" West " Amp 2285 max 3427

180 electric locos needed 10% of which in shop –

Thinks Elec should draw 70 East + 90 West
go over hill 5½ hours. May no trains to
be handled in one direction 62 – ~~7~~
attend loop 30 min inspection + goes back +
go on 2 hours & make trips day 24 hours.

41 Elec. Locs wanted
add 9 extra for repairs etc —

Estimated Elec Locs Cost $70 000. Each
Total Cost of Locos for repairs $3 520 000

Expect on Steam Locs 5% — at least scrap value of
20% of its Cost, to wit $18800 1st cost.

8 lbs Coal for Steam Locs HP drawbar

Trains in lbs per ton 4.2 lbs —

Total Cost fuel Steam Locos $1 374 330 Yr

1.79 mills per Elec HP in suppressed calculation

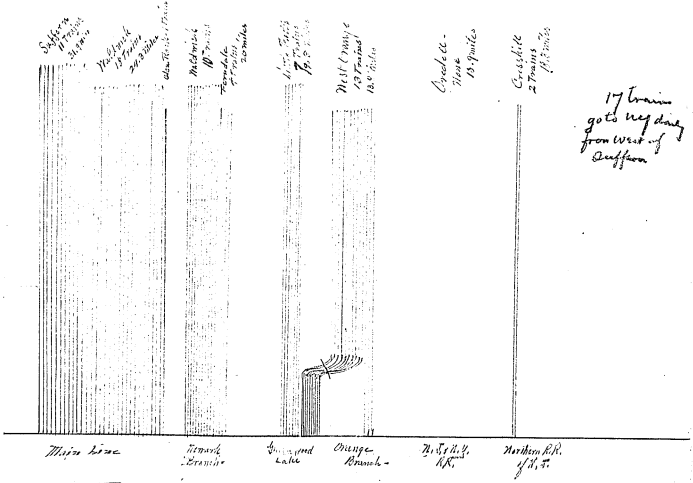
average out Cars East bound 55 tons
" " " West bound 20

Average net trains flat tons Steam Eastbound 2750 Elec 3850
" " " " Steam Westbound 1300 " 1800

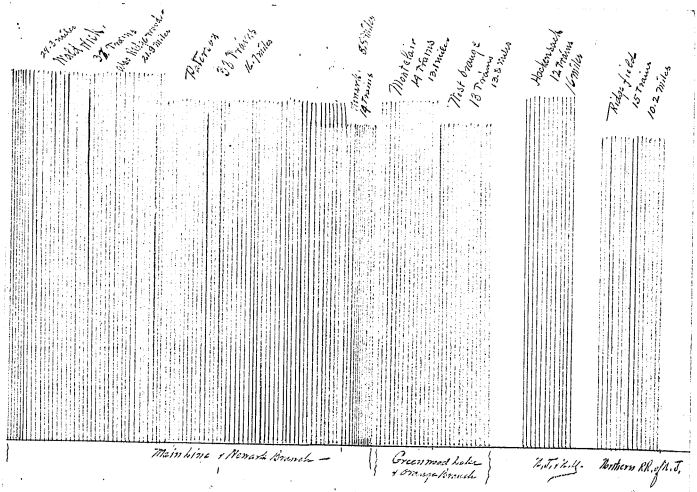
Steam drawbar pull 10400 Elec 14400

Train be operated like Suburban
Railway so same rates of wages
attained —

High discharge costs
Can be sold for 1/6. more
per cell but 1/2 the cells
required —



Trains originating at above Stations.



All Trains Stopping at above Stations.